

The Application discloses three align rollers 141, 143, and 151. (Application, pg. 8, line 8). FIG. 4 of the Application further shows a shaft 111 with a roller 113 on the shaft 111. Further, the Application discloses that the feed assistance or weight idler roller 110 is not connected to any of the align rollers 141, 143, 151 which move the paper in the vertical and lateral directions. See, FIGs. 2, 3, 4, 6 and discussion on pg. 9. The Application discusses how the weight idler roller 110 rides on the medium to act as a follower roller. (Application, pg. 8, lines 11-12). Thus, the weight idler roller is a follower roller which moves when the paper passes the roller and does not move as a result of a physical connection to the align rollers 141, 143, and 151.

Thus, the amendments to claim 1 are disclosed in the Application.

Claim 2 recites at least one align roller, a shaft and a feed assistance roller on the shaft to apply pressure on the medium to stabilize the medium, and that the feed assistance member is not rotably connected to the align roller. FIGs. 1, 4 and 5 disclose this claimed feed assistance roller 110. The Application at page 8, lines 13-20 discuss how the roller is used to stabilize the feed of the medium.

The Application at page 9, lines 5-8 and FIG. 1 discloses the requirements of claim 3 of at least one vertical align roller 141 or 143, one lateral align roller 151 and the feed assistance member 110 mounted between the align rollers 141, 143, and 151. See also, Application, pg. 1, lines 24-28.

The Application at page 3, lines 9-15 and claim 1 in the filed Application disclose the requirement of claim 4 that the align rollers have a non-circular cross section.

The Application at page 9, lines 8-12 disclose the requirement of claim 5 that the feed assistance member is aligned in the vertical direction as shown in FIG. 1.

The Application in FIG. 4 and on page 9 discloses the requirement of claim 6 that the feed assistance member comprises two brackets 115 and 117 including open grooves and that the shaft 111 is disposed in the grooves of the bracket.

The Application at page 9, lines 24-25 discloses the requirement of claim 7 that the total weight of the feed assistance roller is applied onto the medium.

A

The Application at page 10, lines 3-16 discloses the requirement of claim 8 that the feed assistance member further comprises a spring for urging the feed assistance roller onto the medium.

The Application at page 5, lines 1-4 discloses the requirement of claim 9 that the medium is paper.

Claims 10 and 12-17 include the feed assistance apparatus of claims 2-8, respectively, in a medium processing device. The Application at page 8, lines 4-5 discloses that the feed assistance member is included in a medium processing device.

The Application discloses on page 5, lines 1-5 the requirement of claim 11 that the medium processing device is a printer and that the medium is paper.

Accordingly, the written description of the Application provides sufficient support for the amendments to claim 1 and added claims 2-17.

2. The Claims are Patentable Over the Cited Art

Amended claim 1 recites a feed assistance apparatus arranged in a feed path of a medium to be processed in a medium processing apparatus. The feed path includes at least one feed roller of non-circular cross section for feeding the medium. The feed assistance apparatus comprises a roller portion contacting the medium being fed to increase a frictional force generated on the medium and a shaft portion supported in a bracket and disposed through the roller portion. The roller portion rotates around the shaft portion so as to move by the thickness of the medium such that the shaft portion is not rotably connected to the feed roller.

In rejecting claim 1 over Nakabayashi, the Examiner found that the roller 30 discussed in Nakabayashi taught the feed assistance roller of claim 1. Roller 30 in Nakabayashi is a feed roller. Nakabayashi further notes that the roller 30 is rotably connected with shaft 43 of forward rotation roller 31 via frame drive 33. As shown in FIG. 6 of Nakabayashi, the feed roller 30 and forward rotation roller 31 are connected via shafts and clutches. (Nakabayashi, col. 4, lines 6-20) Nakabayashi mentions that the feed roller 30 and other rollers start to rotate in conjunction with the start of rotation by the drive shaft 34 shown in FIG. 6. (Nakabayashi, col. 4, lines 62-65).

A

Claim 1 is patentable over Nakabayshi because claim 1 requires that the roller portion is not rotably connected to the feed roller and moves by the thickness of the medium. Nakabayshi does not teach or suggest that the roller 30 is not connected to a feed roller and that the roller 30 moves by the thickness of the medium. Instead, Nakabayshi shows in FIG. 6 how the roller 30 and other rollers are all connected using shafts and other components to move when a motor causes a common shaft to move.

Thus, amended claim 1 is patentable over the cited art because the Examiner has not identified any teaching in Nakabayshi or any other cited art of a roller that is not connected to a feed roller and that moves by the thickness of the motion.

Claim 2 recites a medium feeding apparatus comprising at least one align roller to align a medium in a path and a feed assistance member. The feed assistance member includes a shaft and a feed assistance roller rotably mounted to the shaft and positioned to apply pressure on the medium in the path to stabilize the feed of the medium. The feed assistance member is not rotably connected to the align roller.

As discussed above, Nakabayshi does not teach or suggest that the feed assistance member is not rotably connected to the align roller. Further, the Examiner has not cited any teaching or suggestion in Nakabayshi, alone or in combination with any of the other cited art, that the roller 30 is used to apply pressure on the medium in the path and stabilize the feed on the medium as claimed. Accordingly, new claim 1 is patentable over Nakabayshi and the other cited art.

Claims 3-9 are patentable over the cited art as they depend from claim 2 which is patentable for the reasons discussed above. Claims 3, 7, and 8 provide additional grounds of patentability over the cited art.

Claim 3 depends from claim 2 and further recites at least one vertical align roller to align the medium in the vertical direction and one lateral align roller to align the medium in the lateral direction. The feed assistance member is mounted between the lateral and vertical align rollers.

A

Nowhere do the cited sections of Nakabayshi teach or suggest a feed assistance member mounted between the lateral and vertical align rollers. Thus, claim 3 provides further grounds of patentability over the cited art.

Claim 7 depends from claim 2 and further requires that the total weight of the feed assistance roller is applied onto the medium. Nowhere do the cited sections of Nakabayshi teach or suggest that the total weight of the cited roller 30 is applied onto the medium. Thus, claim 7 provides additional grounds of patentability over the cited art.

Claim 8 depends from claim 6 and further requires a spring for urging the feed assistance roller onto the medium. Nowhere do the cited section of Nakabayshi teach or suggest a spring for urging the cited roller 30 onto the medium. Thus, claim 8 provides additional grounds of patentability over the cited art.

Claims 10 and 12-17 substantially incorporate the feed assistance apparatus of claims 2-8 into a medium processing device. Claim 11 depends on claim 10. Thus, claims 10-17 are patentable for the reasons discussed with respect to claims 2-8 as claims 10-17 include the feed assistance apparatus of claims 2-8.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-17 are patentable over the art of record. A one-month extension of time is submitted and accompanying extension fee is submitted herewith. Nonetheless, should any additional fees be required, please charge Deposit Account No. 50-0585.

//

//

//

//

//

//

//

A

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

Dated: April 17, 2000

By: 

David W. Victor
Reg. No.: 39,867

Please direct all correspondences to:

David Victor
Konrad Raynes & Victor LLP
1180 South Beverly Drive, Ste. 501
Los Angeles, CA 90035
Tel: 310-553-7977
Fax: 310-556- 7984

A